TWENTY-NINTH ANNUAL REPORT

ON THE

SANITARY CONDITION

OF

MERTHYR TYDFIL,

BEING THAT FOR THE YEAR 1893,

PREPARED FOR THE LOCAL BOARD OF HEALTH

BY THEIR

Medical Officer,

THOMAS JONES DYKE,

FELLOW OF THE ROYAL COLLEGE OF SURGEONS, ENGLAND, AND OF THE SANITARY INSTITUTE OF GREAT BRITAIN; MEMBER OF THE BRITISH MEDICAL AND OFFICERS OF HEALTH ASSOCIATIONS, AND OF LA SOCIETE FRANCAISE D'HYGIENE, ETC.

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CONTENTS.

Chapter I.—Population, Births, Marriages, Vaccinations, and Deaths in 1893.

SECTION.		PAGE.
	Tables A and B...	
1	Population	1
2	Births	2
3	Marriages	,,
4	Vaccinations	,,
5	Deaths	3
6	Ages at Death	,,
7	Average Age at Death...	,,

Chapter II.—Notification of Infectious Diseases, and Causes of Death.

8	Notification of Diseases	3
	Tables C and D	4, 5
9	Scarlet Fever	6
10	Diphtheria	7
11	Enteric, or Typhoid Fever	8
12, 13, 14	Outbreak of Typhoid Fever amongst the Operatives engaged in the Cyfarthfa Brickyard	,, ,,
15	Puerperal Fever...	11
16	Whooping Cough	,,
17	Measles	,,
18	Diarrhœa	,,
19	Syphilis	,,
20	Erysipelas	12
21	Smallpox..	,,
22	Constitutional Diseases...	,,
23	Developmental Diseases	,,
24	Local Diseases	,,

Chapter III.—Statistics and Inspection of each Division, Water Supply, Rainfall, &c.

SECTION.		PAGE.
25	Dowlais Division	13
26	Penydarren Division	14
27	Tydfil's Well Division	,,
28	Merthyr Town Division	,,
29	Gellideg Division	15
30	Troedyrhiw Division	
31	Merthyr Vale Division...	,,
32	Treharris Division	16
33	Union House	,,
34	Merthyr General Hospital	,,
35	Merthyr and Dowlais Fever Hospitals	,,
36	Nuisance Removal and Inspection of Districts	,,
37	Water Supply	17
38	The Common Lodging Houses	,,
39	Sewage Irrigation Areas	,,
40	Rainfall	18
41	The Dairy and Cowsheds' Order	19
42	Inspection of Workshops, Bakehouses, &c....	,,

SECTION.		PAGE.
43	Housing of the Working Classes Act, &c.	19
44	Rivers' Pollution	,,
45	Conclusion	20
(*a*)	Table 1—Population, Inhabited Houses, Marriages, Births, Deaths, &c.	21
(*b*)	Table 2—Births and Deaths for the years 1866 to 1893	22
(*c*)	Table 3—Deaths Registered from all Causes during the year 1893	23
(*d*)	Summary to Table 3	26
(*e*)	Table 4—Deaths from Certain Groups of Diseases, &c.	27
(*f*)	Table 5—Deaths in the 20 years 1866 to 1885, and in the years 1886—93, from Zymotic Diseases	28
(*g*)	Notices Served for the Abatement of Nuisances ... ... Report of Inspector of Nuisances	29
	Merthyr and Dowlais Fever Hospitals	31
	Supplementary Table for Annual Reports	30, 31

TABLE A.

Estimated Population of the Parish and District of Merthyr Tydfil, 1st July, 1893.

Registration Districts, Divisions, and Boundaries.	Occupied Houses.	Population.
A.—MERTHYR UPPER REGISTRATION DISTRICT:		
1. Dowlais Division. Boundaries—North of Dulais and East of Morlais Brooks	3,160	17,380
2. Penydarren Division. Boundaries—North of Morlais and East of Goytra Pond Brooks	820	4,920
3. Tydfil's Well Division. Boundaries—West of Goytra Pond Brook and East of Taff River	1,320	6,600
Total	5,300	28,900
B.—MERTHYR LOWER REGISTRATION DISTRICT:		
4. Merthyr Town Division—South of Morlais, East of Taff, and North of Cwm Blacks Brook	2,220	11,100
5. Gellideg Division—South of Ffrwd and North of Canaid Brooks, and West of Taff River	1,050	5,250
6. Troedyrhiw Division—South of Canaid and Cwm Blacks Brook to the South Parliamentary Boundary ...	1,580	8,690
7. Merthyr Vale Division—South of Parliamentary Boundary to Aberfan Brooks and Lanes	610	4,270
8. Treharris and Goytra Coed Division—South of Aberfan Brooks to South Boundary of Parish...	840	5,880
Total	6,300	35,190
LOWER REGISTRATION DISTRICT:		
9. Quakers' Yard Sub-district—South of Parish Boundary to Fabon's Brook, Llanvabon Parish...	266	1,330
Totals	11,866	65,420

TABLE B.

Showing Number of Separate Families, of Houses, Occupied, Vacant, or Building; and of Population in 1st, Ecclesiastical Districts; 2nd, Hamlets; 3rd, Wards; and 4th, Registration Districts of the Parish of Merthyr Tydfil; Census, April, 1891.

1.—Ecclesiastical Districts.	Sep. Families.	Occupied.	Vacant.	Building.	Males.	Females.	Both.
Dowlais	3,387	3,369	87	11	9,574	8,035	17,609
St. John's, Penydarren ...	931	914	16	0	2,300	2,203	4,503
Cyfarthfa	1,652	1,654	99	2	4,056	3,865	7,921
Merthyr	2,597	2,589	124	6	6,392	6,363	12,755
Pentrebach*	2,700	2,566	40	2	8,566	6,726	15,292
	11,267	11,092	366	21	30,888	27,192	58,080
2.—Hamlets.							
Heolwormwood	5,805	5,769	203	12	15,684	14,048	29,732
Garth	2,155	2,147	106	5	5,211	5,027	10,238
Gellideg	1,308	1,300	40	2	3,317	3,053	6,370
Taff and Cynon	415	409	2	0	1 432	1.028	2,460
Fforest	1,584	1,467	15	2	5,244	4,036	9,280
	11,267	11,092	366	21	30,888	27,192	58,080
3.—Wards.							
Town	2,079	2,073	115	7	5,238	5,182	10,420
Dowlais	2,342	2,342	66	5	6,627	5,569	12,196
Penydarren	2,090	2,073	43	5	5,470	4,895	10,365
Cyfarthfa	1,824	1,826	112	2	4,448	4,274	8,722
Plymouth	1,548	1,538	15	2	4,258	3,748	8,006
Merthyr Vale	1,384	1,258	15	0	4,847	3,524	8,371
	11,267	11,092	366	21	30,888	27,192	58,080
4.—Registration Districts.							
Upper...	5,216	5,188	190	10	13,918	12,270	26,188
Lower...	6,051	5,904	176	11	16,970	14,922	31,892
	11,267	11,092	366	21	30,888	27,192	58,080

* This includes Merthyr Vale, Treharris, &c.

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BEING THAT

FOR THE YEAR 1893.

MERTHYR TYDFIL, 1ST FEBRUARY, 1894.

GENTLEMEN,—

Referring to Table B. printed herewith you may read the details of the numbers of the people resident in each *Ward* and *District* of the Parish at the period in April, 1891, when the Census was taken. Subsequently, a very considerable increase in the number of the occupied Houses has taken place. At the end of June, 1892, I learned that 11,440 Houses were tenanted, an increase of 348. The increase in the average of Births registered indicated an increase in the number of the occupants of the Houses, and, as stated in my last report, it was found that in very many of the newly-erected Houses two families resided.

The prosperity of the Coal and Steel Trades in 1892-93 drew still larger numbers of working men into the District—additional Houses were being built, and as soon as in any way habitable were occupied; so that by the 1st of July, 1893, the number of Houses tenanted was increased to 11,600, the number assessed in the Rate Book of the Parish, which fact I have learned from Mr W. J. Jones, assistant overseer,

Special Enquiries were made by your Sanitary Inspector, Mr J. T. Owen, assisted by the Foreman in each District, and from the Return supplied me by them I have been able to form a reliable estimate of the increase of the population in each locality. This estimate I now present to you in the Table marked A.

Here I must mention that the portion of the Parish of Llanvabon added to the District of this Local Board of Health, the part called Quakers' Yard, attached to the Treharris Ward, came nominally under your charge in all Sanitary matters in March, 1893, but it was not until the autumn of that year, that your Surveyor had charge of the locality. I have received statements from the Registrar of Births and Deaths of Llanvabon, but as my definite appointment was made in the early part of January of this year, I have not been able to report to you on the Sanitary condition of the new District. This I hope to do in the course of the Spring and Summer.

CHAPTER I.

1. **POPULATION.**—The bases, therefore, for the vital statistics for the year 1893 will be for the parish of Merthyr Tydfil, a population of 64,090, occupying 11,600 houses, and for the district of the Local Board of Health the addition of 1,333 persons, occupying 266 houses, in the Quakers' Yard sub-district; in all, 11,866 houses, with 65,423 inhabitants.

2. **BIRTHS.**—The births registered in the parish of Merthyr numbered 2,408. Of these 1,277 were male children, and 1,131 females. Calculated on the population, the birth rate would be 37·4. The large number of 110 of these births were those of illegitimate children—4½ per cent. The births in Quakers' Yard sub-district in the second half of 1893 were 21, so that on the population of 1,330 the birth rate was 31 5 per 1,000.

3. **MARRIAGES.**—The marriages solemnised in Churches numbered 75, and those legalised in the presence of Registrars, 494, making 569; 71 less than in 1892, and 164 less than in 1891. The poverty which existed during the continuance of the strike among the hauliers and their fellow-workers may account for this diminution.

4. **VACCINATIONS.**—The number of vaccinations successfully performed by the public vaccinators and by private practitioners was 2,187. Bearing in mind the large number of infants who die during the first two months after birth, I am of opinion that the number of the vaccinations as stated is very satisfactory. Mr. Morgan, the

vaccination officer, also reports that 217 persons were re-vaccinated. The Board of Guardians authorised this being done at the time in March, 1893, when a case of smallpox was removed from the Workhouse Infirmary to the Fever Hospital.

5. **DEATHS.**—The deaths recorded in Merthyr Tydfil were —of males, 749, and of females, 684, making the total of 1,433. This is less by 273 than in the last year. The death rate on the population was 22·3 per 1,000, as against 28·3 in 1892, and 30·6 in 1891. The deaths registered in Quakers' Yard sub-district were 14 during the half-year, equal on a population of 1,330 to an annual rate of 21 per 1,000.

6. **AGES AT DEATH.**—The deaths of 718 children under five years were registered, equal to 50 per cent. of all deaths—a very high number, but somewhat less than in 1892, diphtheria, diarrhœa, scarlet fever, and measles being the maladies which in the main caused death. By far the greater number of cases of measles and of scarlet fever occurred to children of from four to under eight—the age at which they attend in the infant school department. Of persons of 15 and under 35 the deaths were 14 per cent. Of those of 35 and under 65, 29 per cent.; of persons who at death were 65 and upwards, 12 per cent. One death was recorded as being 103 years of age.

7. **AVERAGE AGE AT DEATH.**—The sum of the time lived by those whose deaths were recorded, divided by the number of deaths, gave 26 years as the average. This average quite maintains that which has prevailed since the parish has been fully under the sanitary regulations which your predecessors and you have caused to be enforced, and contrasts most favourably with the dark days before 1850, when the average was but 17½ years.

CHAPTER II.

NOTIFICATIONS OF INFECTIOUS DISEASES AND CAUSES OF DEATHS.

8. **NOTIFICATION OF DISEASES.**—During 1893, the fourth year of the continued prevalence of Scarlet Fever in this Parish, the number of notifications have been very numerous, Scarlet Fever taking the lead. The total of cases reported being 998, as against 1,030 in 1892, and 1,087 in 1891. The number of the cases of each malady required to be notified and of the deaths therefrom may be read on the accompanying Table C.

TABLE C.

Numbers of Cases of Infectious Diseases notified in each Division in 1893, and Deaths therefrom.

DISEASES.	Small-pox.	Scarlet Fever.		Diphtheria.		Enteric Fever.		Erysipelas.		Puerperal Fever.	Totals.	
Ages under and over 5 years.	Over	Under	Over	Under	Over	Under	Over	Under	Over	Over	Under	Over
1. Dowlais	0	16	28	49	65	0	19	1	23	9	66	144
2. Penydarren	0	3	1	1	0	2	19	0	4	2	6	26
3. Tydfil's Well	0	34	51	1	12	0	21	2	29	2	37	115
4. Merthyr Town	0	116	147	3	12	0	13	2	29	6	121	207
5. Gellideg	0	24	41	0	3	0	12	0	7	12	24	75
6. Troedyrhiw	0	23	18	0	0	0	4	0	8	3	23	33
7. Merthyr Vale	0	35	53	0	0	0	3	0	13	0	35	69
8. Treharris	0	1	4	0	1	0	1	0	0	0	1	6
9. Union House	1	0	0	0	0	0	4	0	5	0	0	10
Totals	1	252	343	54	93	2	96	5	118	34	313	685
Cases	1	595		147		98		123		34	998	
Deaths	0	20		16		11		6		18	71	

TABLE D.

Showing Deaths from other Specific Febrile Diseases.

DISEASES	Measles.		Whooping Cough.		Diarrhœa.		Totals.		Total.
AGES	Under 5	Over	Under 5	Over	Under 5	Over	Under 5	Over	
DIVISIONS.									
1. Dowlais	1	0	12	1	20	1	33	2	35
2. Penydarrén	1	0	2	0	15	1	18	1	19
3. Tydfil's Well	1	0	2	0	7	0	10	0	10
4. Merthyr...	2	0	2	0	14	2	18	2	20
5. Gellideg	1	0	3	0	8	0	12	0	12
6. Troedyrhiw	13	0	3	0	7	0	23	0	23
7. Merthyr Vale	0	0	0	0	2	0	2	0	2
8. Treharris	9	0	0	0	7	0	16	0	16
9. Union House	0	0	0	0	1	2	1	2	3
	28	0	24	1	81	6	133	7	140

On Table D. may be read the number of Deaths from *other* forms of Fevers, which are not required by the directions of your Board to be reported to your Medical Officer. The number of the Deaths from these Fevers are very many. The reason why Measles and Whooping Cough have not been included in the category of maladies to be notified has been in previous reports explained to you, namely, that the period during which a child, having caught the infection, is sickening, before any symptoms indicate the character of the malady, is from 14 to more days, and that during a part at least of that period of sickening, the malady may be communicated to others. I have continued to follow out the course explained in my last report, of bringing to the notice of the school authorities—the Clerks of the Boards and Managers, and to the Head Teachers—the names and residences of each child reported to me as being ill of any of the notifiable maladies. I am glad to be able to say that all parties concerned are satisfied of the desirability of the information being given them, and more especially since the last amendment in the Education Code enables that Department to pay certain fees for all children absent on account of certain sicknesses notified to a Medical Officer of Health, and by him certified to be excluded from school for a defined number of days.

9. **SCARLET FEVER.**—The number of the cases reported was 595, and the Deaths therefrom 20, equal to $3\frac{1}{3}$ per cent. The rate of the mortality at the earlier times of the epidemic was 10 per cent. It will be observed on the Table C. that a very large proportion of the cases in 1893 occurred in the Town District, and it is right to state that there are five schools within that district at which young children are educated.

10. **DIPHTHERIA** was the certified cause of the illness of 147 persons, of whom 54 were children under five years of age and 93 children between five and 15, and a very few persons of ripe age. The mortality among this number was 16, the rate being nearly 11 per cent. The malady prevailed principally in Dowlais, where 114 of the cases occurred. It began in residences situated at the top of Dowlais and at Ifor Town, Dowlais, 1,100 feet above the sea level, in the early part of January, 1893, shortly after the break-up of a very severe frost. In February the weather was very dry and cold ; the water supply was inadequate to flush the sewers, and this inadequacy continued for many months. The effect of the severe frost was to freeze the earth around the yard traps, and under and around the closet syphons. When these were thawed, the clay used in luting these earthenware appliances became loosened, and afforded spaces through which sewer gases could escape. Both the localities named above are at the terminals of the large main sewers of

Dowlais. Upon investigating the sanitary arrangements at the backs of the houses where the first cases were reported from, namely, Coedcae Houses, top of Dowlais, and Upper-row, Ifor Town, it was found that what I have stated had taken place; the closet pans and syphons were loose, and the yard traps also, the sewer gases escaping freely. In every instance where a case or cases of the malady was reported your officers found that this same derangement of the sanitary appliances had occurred.

The season, as I have said, was a very dry one; the water supply was short, and this means of flushing the sewers adequately was not available for some time. When, at last, rain fell in sufficient quantities, and the mains were flushed from their uppermost terminals, the malady gradually ceased to prevail.

On two previous occasions during the last 25 years similar outbreaks of diphtheria and also of enteric fever occurred in Dowlais. Then, as recently, it was mainly in the district of the lines of sewers from Ifor Town, along the north-west of Dowlais, to Castle-street, and the main sewer in High-street. At those two periods it was found, on the first occasion, that an opening—left purposely for the escape of sewer air at nearly the highest point of the sewer—was covered over. The covering was removed, the sewer was flushed, and, as I then reported to you, the diseases soon ceased to prevail. On the second occasion a like outbreak of diphtheria, enteric fever, and erysipelas occurred along the whole length of these same sewers. Naturally my first visit was to the place where the late surveyor (Mr. Harpur), at my request, had caused a low chimney to be built over the top outlet of the sewer. I found the top of the chimney had fallen into the sewer, and blocked it up. The removal of the bricks and the flushing of the sewers soon set matters right again.

On this occasion also my first enquiry was as to whether the new chimney, which was of some 20 feet high, had suffered any injury. I learned that some bricks had fallen in, but that the current of sewage downwards and of sewer air upwards was not impeded. But, as I have said, there was no sufficient supply of water to flush these sewers; and, as I have also said, that when the rain did fall and supply sufficient water thoroughly to flush the sewers, and when this flushing was regularly done for some weeks, the reports of cases ceased to come from the greater part of the area affected: from the greater part, but not from one especial part, namely Sand-street, Dowlais. From this locality the occurrence of diphtheria and of enteric fever has been continuously reported. The inspections and openings to lines of sewers carried out under the direction of your Surveyor have shewn that the whole lines of sewers in this locality have been very imperfectly laid, and will need special attention.

Cases of diphtheria, as will be seen by the table, occurred in other parts of the district of the Board. In *every instance* your Sanitary Inspector has discovered the escape of sewer gas from closets or from sewers. The prevention of this escape resulted in the disappearance of all disease.

11. **ENTERIC OR TYPHOID FEVER.**—Two children and 96 adults were notified as being ill of this malady during the year. Eleven deaths were registered. The cases are nearly twice as numerous as in the last year. The localities in which the cases, chiefly occurred were :—Sand-street, Dowlais ; Gellifaelog, Penydarren ; Heolgerrig, in Gellideg.

(*a*) The outbreak in Sand-street, Dowlais, I have described in the last paragraph, and in paragraph 25.

(*b*) Outbreak at Penydarren is described in paragraph 26.

(*c*) Outbreak among operatives at Cyfarthfa Brickyard.

This occurred during my holidays in September, the cases were seen, the facts recorded, and the report thereon made to you by Dr. Simons, appointed by you as my Deputy. I here insert his report and analyses :

12. OUTBREAK OF TYPHOID FEVER AMONGST THE OPERATIVES ENGAGED IN THE CYFARTHFA BRICKYARD.

A point of great interest in connection with this outbreak is the fact that at about the same time there were ill of Typhoid Fever in three parts of the town four girls of nearly the same ages, and all of whom were engaged at the Cyfarthfa Brickyards.

It was this fact that led to enquiries being made as to a possible common source of infection. The works were visited, and the water supply was examined as to its sources, and samples of it were taken for analysis and for Bacteriological examination.

The following important information was gained from the enquiries and the analyses :—

The water used for drinking purposes at these Brickyards was obtained from two spouts, which were traced to arise from the percolation from the two feeders or carriers conveying the waters from the Rivers Taff Fawr and Taff Fechan to the iron works.

This was ascertained from the fact that when either one of the carriers was emptied, one of the spouts dried up. Thus Spout A. dried when carrier A was empty, and spout B. when carrier B, was empty.

The feeder derived from the Taff Fawr runs from below the Railway Viaduct at Cefn to the works. It runs from the above named point along the west bank of the Taff Fawr to the place where this river joins with the Taff Fechan to form the River Taff, and thence it continues to the iron works, passing on its way behind, and at a higher level than the Brick Works; its total length as measured on the ordinance map being about three-quarters of a mile.

It is known by the name of the "High Level Feeder."

Almost immediately above the intake of this feeder is a deposit of filth and ashes on the Cefn bank of the River Taff Fawr; some drainage from the village of Cefn also reaches the river above the intake of the feeder. There is, of course, no means possible for the prevention of accidental pollution of the water in the feeder itself, which runs in the open right into the works; but it is not likely from the surroundings that the water would be polluted except in the works or in the last eighth of its course.

The waters from the Taff Fechan are carried in what is called the "Low Level Feeder," from a weir below the road bridge at the bottom of the village of Cefn direct into the works, a distance of about one sixth of a mile as measured on the Ordinance map.

13. Under the Road bridge at the bottom of Cefn the surface drainage from the town discharges into the river. There is evidence of the direct pollution of the water in this stream with Typhoid excreta in the latter fortnight of July; a case of Typhoid Fever having occurred in Well-street, and all the slops and discharges from the patient having found their way along a surface water gutter direct into the river. The sequence of the cases connected with this epidemic is shown in the following table:—

Case	Date.	Name.	Age.	Residence.	Distance from works.	Remarks.
*1.	17 Aug.	J.D.	17	Penydarren	2½ miles	Died.
†2.	7 Sept.	J.D.	12	Quarry Row	¾ mile	
*3.	12 Sept.	E.J.	16	67, Heolgerrig	2 miles	
*4.	15 Sept.	S.D.	17	Quarry Row	¾ mile	Sister to 2.
*5.	15 Sept.	M.G.	14	29, Heolgerrig	2 miles	
*6.	10 Oct.	M.M.	29	67, Hoelgerrig	2 miles	
*7.	12 Oct.	D.R.	26	George Town	1 mile	
8.	16 Oct.	M.G.	35	29, Heolgerrig	2 miles	Mother of 5.
9.	17 Nov.	J.G.	13	29, Heolgerrig	2 miles	Sister of 5.
10.	20 Nov.	M.R.	28	George Town	1 mile	Wife of 7 died.
11.	26 Nov.	M.M.	68	67, Heolgerrig	2 miles	Mother of 6 died.

Cases marked * were engaged at the Cyfarthfa Brickworks.

† This child used to take food to his sister, case 4, and drank of the water from spout A. 244.

It will be seen from the above table that the first case occurred on August 17, 1893. This case, however, was not reported to your Medical Officer until September 8, or the day after the patient died. Enquiries made at the patient's house elicited the fact that the illness dated from the day as stated in the table.

Cases 2, 3, 4, and 5 apparently were infected at about the same date.

Cases 6 and 11 were evidently due to infection from case 3.

Case 7 was an individual who drank water from the spout, after it had been closed as a supply, and forbidden to be used by the Company.

14. The results obtained on examining the waters are given ni the following table :—

	A. No. 243, Low Level Feeder.	A. No. 244 Spout at Back of Brick Kilns.	B. No. 245, Spout at Back of Fitting Shop.
Chlorine	0·83 ...	0.77 ...	0·75
Free Ammonia	0·182 ...	0·008 ...	0·004
Albuminoid ditto.... ...	0 013 ...	0·006 ...	0·008
Nitrates as N.	0·009 ...	0·093 ...	0·012
Nitrites as N.	0·004 ...	0·017 ...	0·001
Total Solids	12·00 ...	11·44 ...	29·40

The Cultivations made from the waters gave the following results :—

	Sample 243, from Low Level Feeder.	Sample 244, from Spout at Brick Works.	Sample 245 from Spout behind Fitting Shop.
No. of Cultivations made in tubes	50 ...	50 ...	50
No. of tubes shewing Typhoid Organism	17 ...	31 ...	9
No. of plate Cultivations made	5 ...	5 ...	5
No of ditto. shewing Typhoid Organism	3 ..	4 ..	1

The quantity taken for inoculation was 0·2 cc. in each case.

Sample A. 244 of the water from the spout at the back of the brick kilns was derived from the percolation from the Low Level feeder. It filtered through about seven yards of soil from the feeder to the spout. Sample B. 245 was derived in a somewhat similar manner from the high level feeder. The organism found resembled as closely as could be possibly made out the organism described as being the cause of Typhoid Fever. Of course, it was not possible to apply the direct test as to the capability of it producing the disease after separation by culture.

It is interesting to note, however, in connection with this localised epidemic, that the case D.R. (7), the person drinking the water after the spout had been closed and the supply forbidden,

was affected with Typhoid Fever. This physiological test seems to substantiate the view that the water was at fault, and to strengthen the position that would be taken if the Bacteriological tests are accepted as really trustworthy and reliable means of proving pollution with the specific organism.

C. E. G. SIMONS, M.B., C.M., D.P.H.

1st February, 1894.

15. **PUERPERAL FEVER.**—The number of the cases of childbed fever notified was 34; of these 14 died, the rate of mortality being 44 per cent. of those attacked. The grave mistake of allowing women who act as midwives also to lay out the bodies of the dead is, I feel sure, the promoting cause of these cases of sickness of women recently confined. The attention of the Legislature has been called to this matter, and I trust that shortly means may be found for preventing such painful sacrifices of mothers. In each case reported, enquiries have been made at the home of the sick and of the midwife, and it has been ascertained that in most cases the midwife had been engaged in so laying out dead bodies (often of persons whose death had resulted from contagious maladies) while in attendance on the mother. The midwives were in each case warned to abstain from attending to any new case of childbirth for a specified time.

16. **WHOOPING COUGH** caused 25 deaths. On more than one occasion during the year it seemed probable that this malady was about to become epidemic. Happily, the attacks passed off lightly. Possibly the very fine weather which prevailed for the most part of the summer and autumn, being favourable to out-door exercise, may have prevented the more extensive spread of this usually very fatal malady,

17. **MEASLES**, another of the enemies of child life, broke out suddenly at Treharris and Troedyrhiw, and caused in the course of six or seven weeks 28 deaths.

18. **DIARRHŒA.**—The deaths due to this disease, affecting principally young children, were 87 in number, a mortality about half as much again as usual. The heat during the summer of 1893 was excessive, and would tend to cause milk—the food of young children—to ferment, become sour, and tend to induce diarrhœa.

19. **SYPHILIS.**—The deaths from this malady were six of very young children, and two of persons in years.

20. **ERYSIPELAS** is one of the maladies required to be certified, and 103 notifications were received. The attack was fatal to five infants and nine adults. In the large majority of cases the face alone was affected. There was scarcely an instance of a second case in the same house.

21. **SMALLPOX.**—A man labouring under this malady was removed on the 11th of March from the Merthyr Workhouse isolation ward to the Merthyr Fever Hospital. The man had been vaccinated in youth. The case was a mild one, and as soon as he was well he left the town. He had come to South Wales from Newcastle-upon-Tyne while sickening with smallpox.

In the foregoing paragraphs I have passed in review the illnesses and deaths from specific febrile diseases. In most years these maladies mark very deeply the sanitary records of the parish. During the year 1893 the death-rate was 16 per cent. of all deaths, or 3·6 per 1,000 of the population.

22.—**IV. CONSTITUTIONAL DISEASES.**—Rheumatism. Twelve deaths were assigned to this malady, one chiefly due to the prevalence of, and exposure to cold weather. Cancer caused in 1892 28 deaths; in 1893 the number was 40. There are indications that the hitherto hidden cause of this malady may be revealed, and if so, let us hope that science will also afford means for the prevention of a very painful form of disease. Tubercular diseases of the lungs, brain, and glands of the intestines caused 178 deaths, a less number than in 1892. Unhappily the mode of treatment advised by Professor Koch did not prove the curative one which all hoped it would be. Diabetes was the cause of three deaths.

23.—5. **DEVELOPMENTAL DISEASES.**—These are maladies due to Debility affecting Infants during the earliest hours and days of existence, or on the other hand, to the decay incident to Old Age. To the former 54 deaths were assigned, to the latter 67.

24.—**VI. LOCAL DISEASES.**—Nervous System. Of the total of 165 deaths attributed to maladies of this system 97 were due to convulsions affecting principally very young children. Heart Disease caused 105 deaths; in 70 instances the ages of the deceased were above 55 years. The promoting cause of the affections of this organ may be set down as the infirmity due to age. Diseases of the organs of breathing, as we are all too well aware, each year cause a heavy toll to be paid to Death. In 1893 the number was 339. The unfavourable effect of the outbreaks of Influenza enhanced considerably the deaths from lung diseases.

To the long list of maladies of the organs of digestion, 64 deaths were assigned. As teething was set down as the exciting cause in 28 instances, one would imagine that early application to a medical man might be the means of saving life. The deaths due to accidents of persons above five years of age were 51. These would be probably persons engaged in the coal and iron works or on railways.

CHAPTER III.

STATISTICS AND INSPECTION OF EACH DIVISION, WATER SUPPLY, RAINFALL, &c.

25. **DOWLAIS DIVISION.**—Elevation above sea level, 800ft. at Gellyfaelog, to 1,200 feet at Dowlais Top. Population, 17,380, occupying 3,160 houses. Deaths from all causes under two years, 201; of and above two years, 196; total, 397. Death-rate on population, 22·7 per 1,000.

Scarlet fever was reported as the cause of illness in 34 cases; six terminated fatally. Diphtheria affected 14 persons, and caused six deaths. There were 19 cases of enteric fever with three deaths; nine cases of childbed fever with four deaths, and 24 cases of erysipelas, fatal in three instances. One death was due to measles, and 12 to whooping cough, giving a total of 54 deaths from specific febrile diseases, in the proportion of three per 1,000 people.

At the village of Pengarnddu, scarlet fever and diphtheria were very prevalent. I need scarcely remind you that the place is not supplied with the usual sanitary conveniences, and I have often had to call your attention to the fact.—Pantyscallog village again has not been sewered; the necessity is urgent.—Cwm-rhyd-y-bedd has been sewered. A marked diminution has been observed in the number of deaths recorded in that locality. This improvement in one place will, I trust, impel you to direct that these other two villages shall be cared for in the near future.

In my remarks on the outbreak of diphtheria in Dowlais in January to May in 1893, I have stated that a cause of such outbreak would be the imperfect flushing and ventilation of the sewers in the north-west district. I would strongly urge that efficient and sufficient means should be provided to allow the escape of foul air at the highest positions of the sewers, and the regular flushing with water at every terminal.

In Sand Street, at the lower part of Dowlais, and in Lower Elizabeth Street, in which the main lateral sewer runs, 12 to 15 cases of typhoid and diphtheria have occurred during the year. Ventilation of the main and careful inspection of yard traps, &c., are needed.

26. **PENYDARREN DIVISION.**—Height above sea level, 600 to 800 feet. Population, 4,920, occupying 820 houses. Deaths under five, 60; of and above five, 60; total, 120. Death-rate, 24·3 per 1,000.

The number of the cases of specific fevers, exclusive of typhoid, was five only, but of the other disease, named typhoid, 21 cases were reported. These occurred chiefly in three houses in Gellifaelog, where cases of the malady were attended to over a period of three months. The sewers were flushed and repaired, but still new cases were reported. It was at last discovered that the main pipe drain was placed in the line of and under a partition wall. This, when reached, was found imperfect. It was repaired, and no more sicknesses occurred. At Old Company-row a similar recurrence of attacks was reported. A long line of drain pipes were found to have been imperfectly laid. The owner had the whole work redone, and the district is now healthy. The new houses built on the Gellifaelog Estate have been well finished, and will prove healthy dwellings.

27. **TYDFIL'S WELL.**—Above sea level, 600 to 800 feet. Population, 6,600, in 1,320 houses. Deaths under five years, 66; of and above five, 66; total, 132. Death-rate per 1,000, 20. This division was heavily visited by fever maladies—scarlet fever and typhoid, diphtheria and erysipelas and puerperal fever. Many illnesses of each were notified. The fatalities were, happily, seven only. A great improvement in the appearance of the "Cellars" in this division has been effected. Houses in Quarry-row and in Brecon-road which had been condemned as unfit for human habitation have been so thoroughly repaired as to be healthy dwellings.

28. **MERTHYR TOWN DIVISION.**—Above sea level, 450 feet to 1,400 feet at Twynywaun. Population, 11,100, residing in 2,220 houses. Deaths under five years, 128; of and above five, 123; total, 251. Death-rate, 22·6 per 1,000. In this, the old town of Merthyr, scarlet fever was very prevalent, 263 cases were reported; only seven cases terminated fatally. Thirty-one cases of erysipelas were notified. Riverside, Ball Court Lane, and Appleton's Court call for considerable improvement. The houses reported in Vulcan Court were condemned, and will be repaired. The miserable tenements at Twynyrodyn (the Thatched Houses) and others have been taken down, and new, commodious, well-built residences erected instead. In this locality and along Tramroad South are many unhealthy dwellings. The provisions of the Housing of the Working Classes' Act will have to be put in force in many cases.

29. **GELLIDEG DIVISION.**—Above sea level, 400 to 1,200 feet. Population, 5,250; occupying 1,050 houses. Deaths under five years, 63; of and above five, 70; total, 133. Death rate, 25·3 per 1,000. In this division 65 cases of scarlet fever were notified. There are six Public Elementary schools, these in times of epidemics act as centres, whence the maladies affecting children are rapidly diffused. Twelve cases of puerperal fever occurred, terminating in death in six cases. The midwives were constantly warned not to attend other women about to be confined. The outbreak of typhoid here has been stated in detail under the proper head.

Hitherto, the intention to sewer this district has often come before you, but unhappily for the health of the people no result has been forthcoming. Bucket closets are in very many cases used, but you have not established a regular system of the removal of their contents, and of the proper scavenging of the roads and bye-ways. The condition of the brook which drains the place is often in a most filthy state; the water does not pass directly into the River Taff, but is conducted in the old coal canal to the Blaencanaid Pits, there to be utilized.

30. **TROEDYRHIW DIVISION.**—Elevation above sea level 400 to 600 feet. Population, 8,690, occupying 1,580 houses. Deaths under five years, 79; of and above five, 79; total, 158. Death-rate, 18 per 1,000. In this division the villages of Plymouth, Pentrebach, Duffryn, and Troedyrhiw, east of the Taff River, and Abercanaid and Pontyrhun on the west, are included. An outbreak of measles occurred at Troedyrhiw, resulting in the deaths of 13 children. Upon my recommendation the board schools were closed, and the malady thenceforth ceased to spread. The projected sewering of Plantation-square and Ash-road at Pontyrhun, and of Furnace-row, Parks Houses, and Newton-street, Abercanaid, has not been carried out. This is greatly to be regretted, as these places are in a bad sanitary condition. The state of the sanitary arrangements at Upper Abercanaid is very unsatisfactory, the sewage discharges into the Canaid Brook.

31. **MERTHYR VALE DIVISION.**—Elevation, 300 to 400 feet above sea level. Population, 4,270; occupied houses, 610. Deaths under five years, 37; of five and upwards, 40; total, 77. Death-rate, 18 per 1,000. Only one death from fever, although 89 cases of scarlet fever and three of typhoid were reported. The main and lateral sewers in this division should be regularly flushed, and back yards properly paved, and gardens fenced. This remark applies specially to Aberfan.

32. **TREHARRIS DIVISION.**—Elevation above sea level, 400 feet. Population, 5,580 ; occupied houses, 840. Included in the estimate for Treharris are the houses and occupants residing at Govtra Coed and Buarth Glas, on the west of the Taff River. The deaths under five years were 62, and of those of five and upwards, 27 ; total, 89. Death-rate, 15 per 1,000.

The unusually high death-rate of children was due to the epidemic of measles, in January, causing 9 deaths ; convulsions, 7 ; premature birth, 7 ; diarrhœa, 7 ; and debility, 7 ; in all 37. The numbers due to each cause are much above the average.

33. **UNION HOUSE.**—Population, inmates and staff, about 400. Deaths under five, 17 ; of and above five, 58 ; total, 75.

34. **MERTHYR GENERAL HOSPITAL.**—The value of this admirably arranged and conducted Institution is more and more appreciated, and the beneficent labours of the Professional staff has been rewarded by the return to work of a very large proportion of their patients. The total admitted during the year was 188. In 19 instances the injuries received were of such a nature as to preclude hope ; 15 patients remained on the 31st December, 1893, thus 154 were discharged cured.

35. **MERTHYR AND DOWLAIS FEVER HOSPITALS,** maintained by the Urban Sanitary Authority, received at the Pant Hospital in Dowlais, 17 patients, and at the Brecon-road Hospital, in Merthyr, 29 patients ; total, 46. The sicknesses were one case of small-pox, one of scarlet fever, seven of erysipelas, 19 typhoid fever, and one of pneumonia. Six of those ill of typhoid fever died, and the old woman ill of pneumonia (a helper at the Hospital at Brecon-road), also died there. The wards are kept constantly ready to receive patients.

36. **NUISANCE REMOVAL AND INSPECTION OF DISTRICTS.**—The labour incident to the due fulfilment of the duties required of him have been most carefully performed by Mr. J. T. Owen, your Sanitary Inspector. An epitome of the work done will be published herewith in the form required by the County Council. The sub-district of Quakers' Yard, and the working of new Acts of Parliament, have added to his labours. The foremen at Merthyr Vale and Treharris will doubtless render Mr. Owen every assistance.

37. **WATER SUPPLY.**—During the summer the supply of water was for some weeks less than was needed, and much watchfulness was evinced by your Surveyor, Mr. Harvey, in husbanding the quantity that could be stored. Happily the "gentle rain" fell, and soon all uneasiness ceased.

The quality of the water has been ascertained by Dr. Simons, who has made from time to time analyses of samples taken at various points. It has been proved to be free from every matter prejudicial to health.

I will here insert an analysis of the water supplied from your reservoirs.

ANALYSIS OF THE WATER FROM TAP AT THE HOLLIES, MERTHYR TYDFIL, JULY 24TH, 1893.

Total Solid Matter ...	...6·5 Grs per gallon.
Chlorine	...0·71 ,, ,, ,,
Free Ammonia	. 0·0011,, ,, ,,
Albuminoid Ammonia ..	...0·0005,, ,, ,,
Nitrates as N	...Traces (too minute to estimate)
Nitrites as N	... ,, ,, ,, ,, ,,
Nitrogen (Organic) ...	...0.001 Grs per gallon.
Carbon (Organic) ...	...0·011 ,, ,, ,,
Lime	...3·3 ,, ,, ,,
Magnesia	...0·52 ,, ,, ,,
Sulphates as SO_3 ...	.. 0·15 ,, ,, ,,
Phosphates	...Traces (too minute to estimate)
Heavy Metals, Lead, etc.	...None.
Alkaline and other Sulphides	...None.
Color	...Faint blue.
Matters in Suspension...	...None.
Micro-organisms per c.c.	.. 2.

C. E. G. SIMONS, M.B., C.M., D.P.H.

38. **THE COMMON LODGING HOUSES.**—The places of resort to the wandering class of men and women who pass their time "upon the road" have been frequently inspected by your Inspector and myself. These houses are under the supervision of Superintendent Thorney. Two houses were reported by your Inspector Owen and myself as being unfit for the reception of lodgers. Orders were obtained directing their closure until put into habitable condition. The number now registered is five in Merthyr and two in Dowlais.

39. **SEWAGE IRRIGATION AREAS.** — The land prepared at Troedyrhiw for downward intermittent filtration continues to act perfectly, as do also the fields of the farms at Berwerdy and Cwm Mill, below Navigation. Upon the actual working expenses a considerable profit is shown annually.

40. **RAINFALL.**—The tables here inserted give the amount of rain collected at three different stations in the district, situate at different altitudes above the sea level. The quantity of rain which fell during the year does not vary materially from the average which I noted during a period of 20 years, and does not indicate the excessive scarcity of the water supply to the district which continued for weeks together during the year. The means adopted on the suggestion of your Surveyor of running the spare overflow from below Pentwyn reservoir directly into the main conduit leading to the filtering tanks, greatly conduced to the supply of the town and district.

PENTREBACH HOUSE.—(ABOVE SEA, 497 FT.)

Month.	Total depth in inches.	Greatest fall in 24 hours. Depth.	Date.	No. of days on which rain fell.
January	3·46	·99	31	13
February	8·4	1 56	26	23
March	1 2	·75	1	6
April	·23	·12	30	3
May	5·02	2·29	20	10
June	2·53	·64	27	10
July	4 25	·71	13	16
August	3·78	99	11	11
September	2 72	1 21	29	11
October	5 11	·85	11	20
November	2·95	·83	26	12
December	9·36	1·65	13	24
Total	49 01			156

PENTWYN RESERVOIR.—(ABOVE SEA, 1,300 FT.)

January	3 85	·86	30	21
February	10·44	1·36	25	27
March	·80	·31	3	6
April	·19	·11	16	3
May	4·74	1·09	19	12
June	2·59	·83	26	11
July	5 29	·93	11	19
August	4·19	·79	3	16
September	3·11	1·02	28	16
October	6 36	1 13	17	23
November	4·10	1·07	25	20
December	9·32	1 46	12	27
Total	54·98 inches.			201

NEUADD RESERVOIR.—(ABOVE SEA, 1,900 FT.)

January	3·86	·78	30	22
February	9·92	1·13	13	27
March	1 14	·55	3	6
April	·31	·17	29	3
May	5·95	1 89	19	12
June	3·19	·95	26	10
July	5·46	·90	11	18
August	4 43	·77	3	15
September	4·13	1·29	28	15
October	6·53	·92	17	23
November	4·33	1 15	25	19
December	8·11	1 46	12	27
	57·36			197

The rainfall for complete years since your guages were fixed has been as follows:—

Year.	Pentwyn. Inches.	Neuadd. Inches.
1888	61·90	63·13
1889	44·06	50·58
1890	52·34	56·15
1891	75·56	76·47
1892	45·96	45·13
1893	54·98	57·36

41. **THE DAIRIES AND COWSHEDS ORDER.**—There are in your district from 450 to 500 cowsheds in use, where Milch cows are kept; these are situate in all parts of the parish, which, as you are aware, includes an area of 27 square miles of surface. It has been found impossible for your one Inspector to supervise the condition as to cleanliness, &c., of so many places; hence, the only control exercised is that of requiring that any cowshed about to be erected shall be built in accordance with the Bye-laws duly authorised, and be provided with a good water supply. Dairies are only found in connection with farms. Usually the milk is taken from the milking place into the house of the milk-seller, strained, and immediately carried into the towns for sale.

Instances have come to my notice, in which cases of contagious maladies have been reported as occurring at dairy farms, and at the residences of milk-sellers. In these cases your Inspector by my direction has warned the parties, and has succeeded in preventing the sale of milk from such places.

42. **INSPECTION OF WORKSHOPS, BAKEHOUSES, &c.**—New Acts of Parliament have been passed by which Inspectors of Factories, Workshops, &c., are empowered to require Medical Officers of Health to visit and report upon the sanitary condition of those places, where very many persons are employed. I have visited and reported in between 40 and 50 such workshops in the year 1893.

43. **HOUSING OF THE WORKING CLASSES ACT, &c., &c.**—These amended Acts relating to the sanitary condition of the habitations of the working classes have been brought to your notice on many occasions, and the orders you gave have been carried out. The improvements required to be done were effected.

44. **RIVERS POLLUTION.**—Your attention was drawn to the pollution of the waters running in brooks to the Taff River by sewage discharged from closets, and by refuse materials from works. The former class of pollutions may be diminished by the extension of the lines of sewers in certain localities; the removal of those arising from the second class is not so easily to be obtained.

45. In conclusion I will add for convenient reference the following summary of the vital statistics of the year 1893.

The population is taken to have been on the 30th June, 1893, 64,090. That is an increase of 6,010 over the numbers numerated at the time of the census.

The births of 2,408 children were registered; the birth-rate per 1,000 would be 37. The deaths were 1,433, representing a death-rate of 22·3 per 1,000.

The average age at death was 26 years.

The number of infectious diseases notified was 998; the deaths caused thereby 71, nearly one out of eight. The deaths from consumption were 74 only, or 11½ per 10,000, as against 38 per 10,000 persons, the rate of mortality from this malady in the years 1845-56.

I am, Gentlemen,

Your obedient Servant,

T. J. DYKE,

Medical Officer of Health.

To the Chairman and Members of the Local Board of Health.

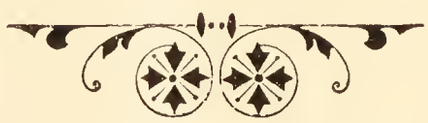

TABLE I.

Showing the Population, Inhabited Houses, Marriages, Births, and Deaths in the years from 1866 to 1893.

GROSS NUMBERS.

YEARS	Estimated Population.	No. of Inhabited Houses.	Marriages.	Registered Births.	Corrected Number of Deaths.			Deaths in Public Institutions.
					Total all Ages	Under One Year.	Under Five Years.	
1866 to 1870	52,352	10,328	630	2,034	1,288	340	229	53
1871 to 1875	52,590	10,575	684	2,088	1,422	345	299	60
1876 to 1880	50,400	9,815	545	1,682	1,108	242	185	45
1881 to 1885	50,573	10,304	684	1,777	1,255	279	225	55
Mean of 20 years.	51,524	10,255	635	1,895	1,275	302	234	53
1886	55 900	10,757	585	1,961	1,420	368	266	87
1887	57,000	11,000	670	1,879	1,239	323	213	58
1888	57,000	11,000	553	2,013	1,246	289	149	93
1889	57,235	11,047	716	1,946	1,330	407	199	59
1890	57,500	11,056	703	2,020	1,500	415	284	108
Mean of 5 years.	56,927	10,972	645	1,964	1,347	360	222	81
1891	58,436	11,092	733	2,302	1,793	445	170	125
1892	63,155	11,440	640	2,341	1,706	569	333	71
1893	64,090	11,600	569	2,408	1,433	529	191	153

1.—Population at Census, 1891, 58,080.

2.—Average Number of Persons in each House at Census, 1891 : 5.

3.—Area of District in Acres : 17,400.

TABLE II.

Shewing the Annual Birth and Death Rates, Death Rates of Children, and Proportion of Deaths in Public Institutions per 1,000 Deaths for the years 1866 to 1893.

YEARS.	Birth Rate per 1,000 of the Population.	Corrected Death Rate per 1,000 of the Population.	Deaths of Children under 1 year, per 1,000 of Registered Births.	Deaths of Children under 1 year, per 1,000 of Total Deaths.	Deaths of Children under 5 years per 1,000 of Total Deaths.	Deaths in Public Institutions, per 1 000 of Total Deaths.
1866—1870	38·7	24·5	169	259	439	41
1871—1875	39·3	26 8	165	240	445	41
1876—1880	33·3	21·9	124	220	417	40
1881—1885	35·0	24 7	158	223	404	44
Mean of 20 years	36·5	24·5	154	235	426	41
1886	33·3	25·3	182	258	438	61
1887	32·8	21·7	177	260	432	47
1888	35·3	21·8	143	232	353	75
1889	34·0	23·1	209	306	455	47
1890	34·7	26·0	205	277	466	72
Mean of 5 years	34·0	23·6	183	266	428	60
1891	39·3	30·6	106	284	343	70
1892	37·0	28·3	242	333	342	41
1893	37·5	22·3	219	368	502	106

TABLE III.

Shewing Deaths Registered from all Causes during the year 1893.

DISEASES.	AGES.											TOTALS
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 & up	
I.—SPECIFIC FEBRILE ...	116	60	13	10	17	8	3	9	1	1	0	238
IV.—CONSTITUTIONAL ...	81	17	13	19	20	31	17	18	5	0	0	221
V.—DEVELOPMENTAL ...	54	0	0	0	1	1	0	4	25	25	11	121
VI.—LOCAL DISEASES ...	217	109	15	35	42	43	90	81	77	17	2	728
VII.—VIOLENT DEATHS ...	3	4	8	7	9	8	6	9	5	2	2	63
VIII.—DEATHS FROM ILL-DEFINED CAUSES..	58	51	0	0	0	1	1	1	0	0	0	62
TOTALS	529	191	49	71	89	92	117	122	113	45	15	1433
I.—SPECIFIC FEBRILE DISEASES.												
1. MIASMATIC.												
Measles	13	15	0	0	0	0	0	0	0	0	0	28
Scarlet Fever	1	15	1	0	1	0	0	0	0	0	0	18
Diphtheria	2	14	7	0	0	0	0	0	0	0	0	23
Enteric Fever	0	0	4	2	3	1	0	2	0	0	0	12
Whooping Cough	19	5	1	0	0	0	0	0	0	0	0	25
2. DIARRHŒAL.												
Diarrhœa	71	10	0	0	0	0	2	4	0	0	0	87
3. VENEREAL.												
Syphilis	5	1	0	0	1	1	0	0	0	0	0	8
4. SEPTIC.												
Erysipelas	5	0	0	0	1	2	1	3	1	1	0	14
Puerperal Fever	0	0	0	7	11	5	0	0	0	0	0	23

DISEASES.	AGES.											TOTALS
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 & up	
IV.—CONSTITUTIONAL DISEASES												
Rheumatism	0	0	3	0	0	8	1	0	0	0	0	12
Cancer	0	0	0	0	0	6	6	12	4	0	0	28
Tubercle – Brain	16	5	5	0	0	0	0	0	0	0	0	26
„ Lungs	0	0	4	18	20	17	10	5	0	0	0	74
„ Mesentery	65	12	1	0	0	0	0	0	0	0	0	78
Diabetes	0	0	0	1	0	0	0	1	1	0	0	3
V.—DEVELOPMENTAL DISEASES												
Premature Birth	39	0	0	0	0	0	0	0	0	0	0	39
Congenital Malformation	15	0	0	0	0	0	0	0	0	0	0	15
Age	0	0	0	0	0	0	0	4	25	25	11	65
Pernicious Anarmia	0	0	0	0	1	1	0	0	0	0	0	2
VI.—LOCAL DISEASES.												
1. NERVOUS SYSTEM.												
Meningitis...	9	5	1	1	0	0	0	1	0	0	0	17
Apoplexy	0	0	0	1	2	2	7	12	12	2	0	38
Convulsions	87	6	0	0	0	1	2	1	0	0	0	97
Traumatic Tetanus	0	0	0	1	1	0	0	0	0	0	0	2
Spinal Sclerosis	0	0	0	0	0	0	0	1	0	0	0	1
Epilepsy	0	1	2	0	3	0	3	1	0	0	0	10
2. CIRCULATORY SYSTEM.												
Heart Disease	1	1	2	6	6	11	28	24	20	5	1	105
4. RESPIRATORY SYSTEM												
Laryngitis	2	10	2	0	0	1	1	0	0	0	0	16
Bronchitis	48	23	1	0	1	4	12	17	24	7	1	138
Asthma	0	0	0	0	0	0	1	0	4	0	0	5
Pneumonia...	38	46	4	11	17	14	21	15	12	2	0	180

DISEASES.	AGES.											TOTALS
	0 to 1	1 to 5	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 & up	
5. DIGESTIVE SYSTEM.												
Dentition	20	8	0	0	0	0	0	0	0	0	0	28
Thrush	2	0	0	0	0	0	0	0	0	0	0	2
Inflamed Tonsils	0	1	0	0	0	0	0	0	0	0	0	1
Gastritis	0	0	0	0	0	0	1	1	2	0	0	4
Enteritis	1	1	0	1	0	2	0	2	0	0	0	7
Hernia	0	0	0	0	0	0	0	1	0	0	0	1
Intestinal Obstruction	1	0	0	0	2	0	2	0	0	0	0	5
Peritonitis	0	0	0	0	3	1	1	0	0	0	0	5
Liver Disease	3	0	1	1	0	2	2	2	0	0	0	11
7. URINARY SYSTEM.												
Bright's Disease	3	5	1	1	3	1	6	1	0	0	0	21
Cystitis	0	0	0	0	0	0	0	2	1	0	0	3
Pyo-nephrosis	0	0	0	0	0	0	1	0	0	0	0	1
Melasma Addisoni	0	0	0	0	0	1	0	0	0	0	0	1
9. REPRODUCTIVE SYSTEM.												
Childbirth	0	0	0	8	3	3	1	0	0	0	0	13
10. BONES AND JOINT DISEASE ..	1	1	1	4	1	0	1	0	1	0	0	10
11. SKIN DISEASE	1	1	0	0	0	0	0	0	1	1	0	4
VII.—VIOLENT DEATHS.												
Fractures, Burns, &c.	0	3	7	7	8	6	6	9	5	1	2	54
Overlying, Drowning, &c.	3	1	1	0	0	1	0	0	0	0	0	6
Alcoholic Poisoning	0	0	0	0	0	1	0	0	0	0	0	1
Manslaughter	0	0	0	0	1	0	0	0	0	0	0	1
VIII.—ILL-DEFINED CAUSES.												
Found Dead	0	0	0	0	0	1	0	0	0	0	0	1
Exposure to Cold	0	0	0	0	0	0	1	0	0	0	0	1
Debility	58	0	0	0	0	0	0	0	0	0	0	58

SUMMARY TO TABLE III.

	No. of Deaths.
I.—Specific Febrile, or Zymotic Diseases:—	
1. Miasmatic	106
2. Diarrhœal	87
3. Malarial	0
4. Zoogenous	0
5. Venereal	8
6. Septic	37
II.—Parasitic Diseases	0
III.—Dietetic Diseases	0
IV.—Constitutional Diseases	221
V.—Developmental Diseases	121
VI.—Local Diseases:—	
1. Nervous System	165
2. Organs of Special Sense	0
3. Circulatory System...	105
4. Respiratory System	389
5. Digestive System	64
6. Thyroid Disease	0
8. Urinary System	26
9. Reproductive System—	
(*a*) Organs of Generation	0
(*b*) Parturition	15
10. Bones and Joints	10
11. Integumentary System	4
VII.—Violence:—	
1. Accident or Negligence	60
2. Suicide	1
3. Manslaughter	1
VIII.—Ill-defined and not Specified Causes	58
Total	1,433

TABLE IV.

Shewing the number of Deaths at all ages in 1893, from certain groups of Diseases, and proportions to 1,000 of Population, and to 1,000 Deaths from all causes; also the number of Deaths of Infants under one year of age from other groups of Diseases, and proportions to 1,000 Births and to 1,000 Deaths from all causes under one year.

Division I.	Total Deaths.	Deaths per 1000 of Population at all ages.	Deaths per 1000 of total Deaths at all ages.
1. Principal Zymotic Diseases...	193	3	133
2. Pulmonary Diseases... ...	339	5	237
3. Principal Tubercular Diseases	152	2	106
Division II. (Infants under One Year.)	**Total Deaths.**	**Deaths per 1000 of Births.**	**Deaths per 1000 of total Deaths under One Year.**
4. Wasting Diseases	92	34	64
5. Convulsive Diseases ...	156	64	294

NOTES.

1. Includes Smallpox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Typhus, Enteric (or Typhoid), and Simple Continued Fevers, and Diarrhœa.
3. Includes Phthisis, Scrofula, Tuberculosis, Rickets, and Tabes.
4. Includes Marasmus, Atrophy, Debility, Want of Breast Milk, and Premature Birth.
5. Includes Hydrocephalus, Infantile Meningitis, Convulsions and Teething.

TABLE V.

Proportion of Deaths from each kind of Zymotic Disease per 1,000 Deaths from all Causes.

Years	1866 to 1875		1876 to 1885		1886 to 1890		1891		1892		1893	
Total Deaths	13,849		11,819		6,732		1,793		1,706		1,433	
DISEASES.	Deaths	Proportions	Deaths	Proportions	Deaths	Proportions	Deaths	Proportions	Deaths	Proportions	Deaths	Proportions
Smallpox	381	27	0	0	1	0·1	0	0	0	0	0	0
Measles	364	26	430	36	123	20	2	1	176	103	28	22
Scarlet Fever	518	37	408	35	308	47	35	20	55	32	18	12
Diphtheria	101	7	59	5	13	2	11	6	14	8	23	16
Whooping Cough	429	31	210	18	177	26	3	1·7	19	11	25	26
Typhus Fever	198	14	19	1·5	5	0·7	0	0	0	0	0	0
Cerebro Spinal Fever	8	0·5	0	0	0	0	0	0	0	0	0	0
Enteric Fever	275	19	159	14	80	12	13	7	8	4	12	8
Continued Fever	6	0·4	14	1	7	1	0	0	0	0	0	0
Diarrhœa and Dysentery	197	14	210	17	192	30	54	30	56	32	87	60
Cholera and Diarrhoea	139	10	0	0	0	0	0	0	0	0	0	0
Totals ...	2616	186	1509	127	906	134	118	66	328	186	193	138

REPORT OF INSPECTOR OF NUISANCES.

Notices Served for the Abatement of Nuisances, 1893.

	Nature of Nuisances.	No. of Notices Served.
1.	Choked, Dilapidated, and Filthy Closets	94
2.	Defective Closet Drains	42
3.	Choked Slop Drains	39
4	Defective and Untrapped Slop Drains	16
5.	Insufficient Closet Accommodation	22
6.	Houses without do.	12
7.	Houses without Slop Drains	25
8.	Insufficient Slop Drainage	13
9.	Closets and Slop Drains, &c, not connected with Sewer ...	35
10.	Houses Dilapidated and Unfit for Human Habitation ...	19
11.	Accumulation of Manure and Offensive Refuse	18
12.	To Provide Receptacles for Manure	5
13.	Pigs kept too near Dwellings, &c.	16
14.	Defective and Foul Gutters	13
15.	Filthy Premises	21
16.	Overcrowding	3
17.	Houses without Water-Supply...	3
18.	Escape of Sewer Gas in House	4
19.	Defective Cistern in W.C.	2
20.	Defective and Dangerous Coal Cellar Openings in Pavement...	1
	Total	402
	Informal Notices Served by Inspector	152
	Legal Notices Served by Authority...	250
	Total	402

PUBLIC HEALTH ACTS (AMENDMENT) ACT.

Since the adoption of this Act, thirty-six summonses have been issued against occupiers of houses, under Section 21, for neglecting to keep their sanitary conveniences, or the approaches thereto, in a proper state of cleanliness. A fine of 5s. was inflicted in each case.

ASPHYXIATOR.

During the year 1893 seventy-one smoke tests were made by me, after having received applications from householders. In 68 out of the 71 tests the drains were found to be defective, only three having been discovered to be in good condition. I am glad to be able to report that in each case the drains have been thoroughly overhauled and made good.

COMMON LODGING-HOUSES.

Six summonses were issued during the year against persons for keeping a common lodging-house without having the same properly registered, in accordance with the requirements of the Public Health Act, 1875.

JOHN THOS. OWEN, C.S.I.,

March 3rd, 1894. *Inspector.*

SUPPLEMENTARY TABLE FOR ANNUAL REPORTS.

URBAN SANITARY DISTRICT OF MERTHYR TYDFIL.

Medical Officer of Health, THOMAS JONES DYKE.
Date of first appointment, October, 1865.
Date of last appointment, March, 1893.
Present Salary, £300.
Term of appointment, Three years.
Rateable Value of District for General District Rate, £200,196 12s. 6d.

Water Supply—

Any extension or change, 1893?	Extended to Quakers' Yard District.
Portions of District inadequately supplied?	Pengarnddu.
Cases of Lead Poisoning in 1893?	None.

Sewerage and Sewage Disposal—

Extensions or Improvements during 1893?	To Quakers' Yard District.

Excrement Disposal—

Are the Privy Middens, &c., cleansed by Sanitary Staff, by Contractors, or by Tenants?	Tenants cleanse Cesspit Closets.
Is the present arrangement satisfactory?	Yes.

Bye-laws and Regulations—

Any change as to Bye-laws, or as to Regulations under Dairies, Cowsheds, and Milkshops Order. [If so please forward a Copy.]	None.

Regulated Buildings, Trades, &c.—

	Number	Are they Inspected and if so, by whom?	General Conditions	Legal Proceedings (if any)
Common Lodging Houses ...	7	Supt. Thorney	Good	Two closed, by order of magistrates
Houses let in Lodgings ...	...	...	...	...
Canal Boats ...	Regt. at Cardiff	John T. Owen (Cert. San. Insp.)	Fairly good	...
Slaughter Houses	28	Do.	...	...
Bakehouses ...	20	Medical Officer	Good	None
Dairies	10	Sanitary Inspector	Good	...
Cowsheds ...	400 to 500	Not inspected	...	...
Milkshops ...	None	...	...	...

Offensive Trades—Manure Works, Horse Slaughter, String-gut Factory, Skin Yard.

Meteorological Observations (if any)

Taken in or near District.	See Tables of Rainfall.

Death Returns—

What corrections (if any) are made for non-residents dying within the District?	No return of non-residents, &c., made.
Are any Returns obtained of deaths of residents occurring in public Institutions (Workhouses, Hospitals, &c.) outside the District?	No.

Deaths—

Please state (*a*) Number of each sex.	749 male, 684 female—1,433.
(*b*) Number uncertified.	

Births—

Please state (*a*) Number of each sex.	1,277 male, 1,131 female—2,408.
(*b*) Number illegitimate.	110.

Hospital for Infectious Diseases—Two

Number of Beds	Pant Hospital, 36. Brecon-road Hospital, 12.
Charges to Patients.	None.
Construction—Brick, Stone, Wood, Iron, &c.	Pant Hospital, wood. Brecon-road, brick.

Adoptive Acts—

(1) Notification Act. Adopted when?	7th January, 1891.
Diseases added.	None.
(2) Prevention Act. ,, ,,	March 18th, 1891.
(3) Public Health Acts Amendment Act. Adopted when?	March 18th, 1891.

House Drainage—

Closets. Approximate number of each kind in the District—

W.C., 9,000. Trough C., 10 (at schools). Slop C. (waste water C.), none. Pail, Pan, or Tub C., 500. Privy Middens, covered, none; uncovered, none. Cesspit Closets, 500. Number of each of the above constructed during the year 1893?

Loans (if any)

Sanctioned by L.G. Board during year? None.

State what action has been taken with regard to the following matter;—

(1) Closure of Houses unfit for habitation. 19.
(2) Seizure of Unsound Food. None.
(3) River Pollution. None.

T. J. DYKE,

Medical Officer of Health.